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RADICAL EMPIRICISM AND WUNDT'S PHILOSOPHY

TO one who has been, even in a modest way, a student of Wundt's philosophical writings, it is a matter of no small surprise that current American discussions such as those which have been conducted by Dewey, James and others, have so largely ignored the Wundtian philosophy. Many of the positions which Wundt clearly defined in his 'System der Philosophie,' and in his later articles in the 'Studien' are identical with the positions now defended by our American empiricists. Furthermore, there are certain phases of Wundt's discussions which one may unhesitatingly say are clear critical treatments of problems which have not yet been finally disposed of by American empiricism. It will not be unprofitable to call attention to some of the similarities and some of the differences between Wundt's philosophy and current American thinking, especially that phase of American thinking which is represented by James's recent articles.

The most obvious agreement with which we have to deal is found in the definitions given to reality. Thus Wundt says in his 'System' (p. 92), "There is no subject and no object whatever outside of our abstracting and analyzing thought. Reality is at once subject and object, thinker and thought." Indeed it is *'unmittelbare Erfahrung'* or immediate experience which constitutes the whole of reality. Everywhere in his writings Wundt strives to make clear the necessity of adopting this definition of reality. He finds, as does James, that such a view of reality 'presents so many points of difference, both from the common sense and from the idealism that have made our philosophical language, that it is almost as difficult to state it as it is to think it out clearly."[1] In passage after passage Wundt pauses to say that his view of reality completely changes the whole character of the discussion of philosophical and psychological problems. Thus with reference to the problem of the relation of body and mind he writes in the 'Outlines of Psychology,'[2] "So long as

[1] James, THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS, Vol. I., No. 21, p. 570.

[2] Second English edition, p. 358.

body and mind are both regarded as substances, this relation (*i. e.*, the relation between them) must remain an enigma in whatever way the two concepts of substance may be defined." If, however, we adopt the attitude towards reality which is fundamental to the whole system of Wundtian philosophy, we shall not define mind and body as substances. We shall find that body is one of the logical constructs derived by the internal working over of immediate experience, and mind likewise is nothing but a name for the unity of real relations. Both mind and matter are included in the reality of immediate experience. "There is only *one* experience, which, however, as soon as it becomes the subject of scientific analysis, is in some of its components open to *two* different kinds of scientific treatment. . . ."[3] The one treatment yields the concept body, the other treatment yields the concept mind.

I need not quote from James's articles, which are so fresh in all our minds, to show that the definition of reality as given by the radical empiricist and the definition as given by Wundt have much in common. Both definitions cut away from the traditions of ontology and give us a distinctly epistemological and psychological starting-point for metaphysics. Both are empirical in the same meaning of that term.

Going beyond the general definition of reality, one can find many special positions in the writings of Wundt and James which are strikingly alike. I shall not refer for the moment to these likenesses, for, after all, the routes by which the two writers reach their special conclusions are different, and the difference in method is the most obvious fact to the reader.

James adopts, as we all know, the pragmatic method of explaining how the particular realities of common life issue from the primary reality of pure experience. A given phase or bit of pure experience finds its corroboration or terminus in some second phase or bit of experience. When the second bit of pure experience fulfills the first, there comes the sense of satisfaction and the realization of certainty, which is our justification for objectifying experiences. Every first bit of experience is, furthermore, directed towards the future, as well as corroborated by the past. "It is 'of' the future in so far as the future, when it comes, will have to continue *it*."[4] This kind of reference to a future makes it necessary for James to say, "The beyond must of course always in our philosophy be itself of an experimental nature."[5]

A philosophy which makes the future frankly of an experimental

[3] "Outlines of Psychology," second edition, p. 361.
[4] *L. c.*, p. 569.
[5] *L. c.*, p. 569.

nature undoubtedly has a difficult task in drawing to it the adherence of the common thinker. That my to-morrow's sunrise is of an experimental nature, is proverbially a difficult proposition to accept.

Let us turn to Wundt's method of deriving from the primary reality of experience the particular realities of life. He says something like this. In the midst of the flux and change of immediate experience there are certain factors which vary less rapidly than do other factors. The kaleidoscope has a general outline which does not change as rapidly as the particular patterns. This relatively greater permanency of certain factors is enough to break up primary experience into certain distinguished phases. The past furnishes in this way, through the changes within experience, sufficient justification for analysis into particulars. And, after analysis has been effected, the relatively most stable factors are the ones most readily and definitely objectified. What is it that science as well as common thinking has come to regard as the most distinctively objective of all facts? Space, answers Wundt. Why? Just because space is the least variable of all the facts of our experience. We are not dependent, according to this view, on the corroborations of the future for the motives for objectification.

Wundt seems by this reference of objectification to the past to escape some of the difficulties of the pragmatic thinking. That the future should corroborate the past is just as natural in Wundt's system as in that of James. But the corroboration is not a new kind of fact with Wundt. It is merely another way of saying that the factors of experience which are relatively stable now are accepted as likely to be stable to-morrow and the next day, and are in corroborative experiences found to be stable as expected.

Wundt pushes the matter still further. Among the regularities and changes of experience there come up certain contradictions. One experience does not on its face show agreement with what follows. Thus, I see a mass of color now, and a moment later it is gone, while the surrounding factors seem to continue relatively unmodified. Here is, in the fact of change, a contradiction between successive experiences rather than the corroboration for which James looks. Such contradictions in experience, says Wundt, are the motives for an active reconstruction of experience. I try to find some means of bridging over the break in my experience. I actively interpret the disappearance of the mass of color. I unify the mass to begin with, and then I put under the colors some substratum that will explain for me the way in which they are carried out of my field of vision. I fill in experience, in other words, with a construct. I use for my case of the colors the construct substance. The construct is, when once built up, my unifying, satisfying factor. I did not find it in

this form in the first bit of experience, but experience drove me to make it up in order to secure internal harmony. The construct is not an original part of immediate reality, it is a supplementary phase of experience.

Wundt goes even further than this. There may be higher constructs than these which are necessary for the organization of experience. Thought often carries itself forward into a purely ideal realm. There are then exercised 'free acts which are carried out by thought in obedience to inner impulses, without any compulsion from perception.'[6] The building up of the idea of infinity is an illustration of this purely ideal activity.

There is in this doctrine of Wundt's system, which recognizes the possibility of transcending original experience, a strength and comprehensiveness which our American empiricism can, it seems to me, hardly afford to overlook. Wundt is not a *radical* empiricist. He has used, in some articles published in the 'Philosophische Studien' later than the 'System,' the title 'critical realism' as descriptive of his general position. Critical realism starts with pure, or immediate, experience, just as does radical empiricism. Critical realism loses nothing of the empiricism which we are all seeking in some fashion to attain. But critical realism does not wait for validity to grow out of corroborations. Critical realism finds that the data of original reality grow and develop by their own progressive variations and relative stabilities. There is here just as much recognition of process as in the thinking of James. There is just as much seeking for the given relations, but there is a frank recognition of the possibility of creative synthesis by which new relations and new demands shall develop. In short, critical realism is radically empirical to begin with, and clearly conscious of its empirical basis throughout, but it does not hesitate to recognize processes which elaborate the original data of experience and bring in new and harmonizing links.

Wundt's position in this matter may perhaps be made clear by asking the pragmatist why there is in given experience any impelling desire for new knowledge. Certainly corroborations are not always explicitly in mind when one feels the lack of unity and harmony among present factors of experience. Certainly no practical demand is immediately conserved by much of our every-day scientific investigation. The investigator feels a certain *vis a tergo* pushing him on to find relations which shall organize what is now at hand. Corroboration usually comes after scientific hypothesis, and will hardly explain why one formulates hypotheses. Indeed, the very direction in which corroboration is to be sought is in the great majority of cases specifically pointed out by hypothesis. Not merely the fact, then,

[6] 'System,' p. 79.

that present experience reaches towards the future must be recognized; it must also be recognized that there are characteristics in the present which determine the exact way in which this reaching forward takes place. The kind of determination of knowledge which James emphasizes, namely, that which consists in corroboration, will, if taken by itself, leave the future, as we have seen, always experimental. The determination of knowledge from behind is in no way incompatible with future corroborations, but it gives to the present a standing and independence which are more in agreement with our usual complacent acceptance of the certainty and objectivity of things.

Another great strength of Wundt's system lies in the fact that he does not find it necessary to minimize distinctions which are of vital importance to both science and plain living. James makes the difference between the extension of things and the spatial characteristics of ideas as insignificant as he can. "Of every extended object," he says, "the adequate mental picture must have all the extension of the object itself."[7] In the next sentence his phrase is again an obvious effort to make the difficulty disappear, for he goes on to say, "The difference between objective and subjective extension is one of relation to context solely." Then follow at length illustration after illustration in which a variety of clearly recognized distinctions between objective and subjective relations are made to seem as unessential as possible. In answer to all this one can hardly refrain from insisting that the first effort ought to be expended in showing how any differences can arise in the midst of a unitary, pure experience. That objective and subjective space are somehow *alike* we all admit, unless, indeed, we refuse to admit the existence of objective space. But how in a world of pure experience can subjective and objective space be different? The difference must not be minimized. If you say to me my idea of a mile is a mile long I am at least at liberty to retort that I am not accustomed to having my ideas described in that way. I save the word mile for the context thing. This being true, the likeness of my idea to the thing is not the matter of discussion; I insist on knowing why one context can make me use the descriptive word mile for a certain bit of experience, and immediately another context can forbid my using the same word for the same bit of experience.

Wundt recognizes this difference fully; his first concern has been to examine it. Given an all-inclusive experience, he asks as his first question, what is the reason for the breaking up of experience? Why is that relation between my sensations which I call subjective space

[7] James, THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS, Vol. I., No. 18, p. 488.

different from the objective relation which I study in my geometry? Because, he answers, after I have a great variety of subjective spatial arrangements, I can abstract the arrangement phase of experience from this or that content; and when I find how permanent the mode of arrangement is as contrasted with the content, I can objectify the spatial arrangement in a unique fashion, and mark it off from my single experiences as objective space. The emphasis with James is on likeness. He is so radically empirical that he seems a little anxious lest his empirical basis shall get away from him. Wundt is no less empirical, but he is ready to admit the necessity in experience of reconstructions and abstractions which rework and redefine the original data of experience.

Another distinction which James tries to make seem unessential is the difference between your object and mine. Like subjective and objective spaces, so myself and other selves do not seem to dwell together in harmony in pure experience. Cover up the distinction between different selves, and the way seems much clearer for a single formula of pure experience. But the distinction between your thing and my thing and yourself and myself will not down. James has in his most recent article[8] gone through some of the objections which may be urged against his position that your thing is identical with my thing. He argues in Section III. of that article that one may have in his own individual experience successive experiences of the same thing, and yet may immediately recognize all these successive experiences as of the same object. Wundt would call a halt even at this preliminary conclusion. Wundt would object that one recognizes the sameness of the thing when the thing is presented in successive experiences, not immediately, but only by actively abstracting from a whole cluster of differences which do, as a matter of actual experience, present themselves. Three experiences of *M* are, according to Wundt, all referred to the same object *M*, only by a crystallizing of the like factors of the three different experiences into an objective reference. The objective reference is what needs to be explained since it does not come full-fledged out of the single original experience. There is no objective reference without a process within the process. And now we see why Wundt would not rush forward, as does James, and say that since there is no reason why my three experiences should not be of the same *M*, therefore we need have no hesitation in believing that your experience and mine and that of my neighbor may also be of the same object. My experience, Wundt would say, refers to an object only by virtue of a developed outward reference. Your object does not have the same history as

[8] 'The Thing in Its Relations,' JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS, Vol. II., No. 2, pp. 29–41.

mine. The transition from subject to subject is even more radical. It is more of a constructive process than the transition from my first experience to my second experience. Wundt does not hesitate to give full emphasis to the distinction between individual experiences. He does not leave the foundation of immediate experience in discussing the concepts by which we bridge over these distinctions any more than does James, but he admits a far-reaching reconstruction within experience.

In short, Wundt goes about his constructive work by dealing with the processes in experience which make for differentiation and secondary reorganization. He holds that in life and in refined scientific thought the emphases within experience and the rearrangements which result from the selections of certain centers of emphasis are of first-class importance. Things are the results of emphasis. Only by reflection and abstraction can things arise; they are secondary. Let me indulge in a somewhat lengthy quotation from Wundt to show how various forms of selective thinking may elaborate the same original data of experience.[9] "It is," he says, "indeed true that there are certain contents of experience which belong to the sphere of psychological investigation and are not found among the objects and processes studied by natural science: such are our feelings, emotions and decisions. On the other hand, there is not a single natural phenomenon that may not, from a different point of view, become an object of psychology. A stone, a plant, a tone, a ray of light, are, when treated as natural phenomena, objects of mineralogy, botany, physics and so forth. In so far, however, as they are at the same time *ideas,* they are objects of psychology, for psychology seeks to account for the genesis of these ideas, and for their relation, both to other ideas and to those psychical processes, such as feelings, volitions, etc., which are not referred to external objects. . . . The point of view of natural science may, accordingly, be designated as that of *mediate experience,* since it is possible only after abstracting from the subjective factor present in all actual experience; the point of view of psychology, on the other hand, may be designated as that of *immediate experience,* since it purposely does away with this abstraction and all its consequences."

Perhaps the disposition which James shows to make little of the distinctions between objective and subjective space, and between your object and mine, is explicable on the ground that James is just now giving us only the introductory chapters of his system. The reason why pure experience breaks up into subjects and objects may come out more fully in later discussions. I am not at all clear that Wundt and James are radically different in their views. As one

[9] 'Outlines of Psychology,' second English edition, pp. 2 and 3.

reads the two at this moment, however, Wundt seems to have gone much further away from the original data of naïve, pure experience; or perhaps we may be justified in saying, further along the road to the common man's world and the world of science. James evidently feels the necessity at first of meeting the absolutist and the rationalist, and of making good his empirical foundations. Wundt spends much less time clearing the ground and takes up very much more fully the details of discussion which issue from his fundamental thesis. That the final outcome of both systems will have much in common is as apparent as any of the differences in procedure which I have discussed above.

Thus James's striking statement that the notion of consciousness must be abandoned in favor of its pragmatic equivalent in realities of experience can be paralleled by the following quotation from Wundt: "There is no place in psychology for hypothetical supplementary concepts such as are necessary in the natural sciences, because of the presupposition in the natural sciences of an object independent of the subject. The concept of the actuality of the mind, accordingly, does not require any hypothetical determinants to define its particular contents, as does the concept of matter, but quite to the contrary, the concept of actuality excludes such hypothetical elements from the first, by defining the nature of mind as the immediate reality of the processes themselves."[10]

Parallelisms such as this one show clearly enough that the temper and tendencies of the two systems are much alike. It is the likeness, after all, which has led me to make these suggestions of a comparison. I shall be satisfied if the differences drop into the background; and I have already indicated that the signs seem to point to a greater convergence, rather than divergence, as the consequences of James's fundamental thesis are worked out.

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HOW TWO MINDS CAN KNOW ONE THING

IN an article in this JOURNAL entitled 'Does Consciousness Exist?'[1] I have tried to show that when we call an experience 'conscious,' that does not mean that it is suffused throughout with a peculiar modality of being ('psychic' being) as stained glass may be suffused with light, but rather that it stands in certain determinate relations to other portions of experience extraneous to itself. These form one peculiar 'context' for it; while, taken in another context of experiences, we class it as a fact in the physical world. This

[10] 'Outlines of Psychology,' second English edition, pp. 356–357.
[1] Vol. I., p. 477, September 1, 1904.

'pen,' for example, is, in the first instance, a bald *that*, a datum, fact, phenomenon, content, or whatever other neutral or ambiguous name you may prefer to apply. I called it in that article a 'pure experience.' To get classed either as a physical pen or as some one's percept of a pen, it must assume a *function*, and that can only happen in a more complicated world. So far as in that world it is a stable feature, holds ink, marks paper and obeys the guidance of a hand, it is a physical pen. That is what we mean by being 'physical,' in a pen. So far as it is instable, on the contrary, coming and going with the movements of my eyes, altering with what I call my fancy, continuous with subsequent experiences of its 'having been' (in the past tense), it is the percept of a pen in my mind. Those peculiarities are what we mean by being 'conscious,' in a pen.

In Section VI. of another article[2] I tried to show that the same *that*, the same numerically identical pen of pure experience, can enter simultaneously into many conscious contexts, or, in other words, be an object for many different minds. I admitted that I had not space to treat of certain possible objections in that article; but in a subsequent article[3] I took some of the objections up. At the end of that article I said that still more formidable-sounding objections remained; so, to leave my pure-experience theory in as strong a state as possible, I propose to consider those objections now.

I

The objections I previously tried to dispose of were purely logical or dialectical. No one identical term, whether physical or psychical, it had been said, could be the subject of two relations at once. This thesis I sought to prove unfounded. The objections that now confront us arise from the nature supposed to inhere in psychic facts specifically. Whatever may be the case with physical objects, a fact of consciousness, it is alleged (and indeed very plausibly), can not, without self-contradiction, be treated as a portion of two different minds, and for the following reasons.

In the physical world we make with impunity the assumption that one and the same material object can figure in an indefinitely large number of different processes at once. When, for instance, a sheet of rubber is pulled at its four corners, a unit of rubber in the middle of the sheet is affected by all four of the pulls. It *transmits* them each, as if it pulled in four different ways at once itself. So, an air-particle or an ether-particle 'compounds' the different directions of movement imprinted on it without obliterating their several

[2] 'A World of Pure Experience,' *ibid.*, Vol. I., p. 564, October 13, 1904.

[3] 'The Thing and its Relations,' in the present volume of this JOURNAL, p. 29.

individualities. It delivers them distinct, on the contrary, at as many several 'receivers' (ear, eye or what not) as may be 'tuned' to that effect. The apparent paradox of a distinctness like this surviving in the midst of compounding is a thing which, I fancy, the analyses made by physicists have by this time sufficiently cleared up.

But if, on the strength of these analogies, one should ask: "Why, if two or more lines can run through one and the same geometrical point, or if two or more distinct processes of activity can run through one and the same physical thing so that it simultaneously plays a rôle in each and every process, might not two or more streams of personal consciousness include one and the same unit of experience so that it would simultaneously be a part of the experience of all the different minds?" one would be checked by thinking of a certain peculiarity by which phenomena of consciousness differ from physical things.

While physical things, namely, are supposed to be permanent and to have their 'states,' a fact of consciousness exists but once and *is* a state. Its *esse* is *sentiri;* it is only so far as it is felt; and it is unambiguously and unequivocally exactly *what* is felt. The hypothesis under consideration would, however, oblige it to be felt equivocally, felt now as part of my mind and again at the same time *not* as a part of my mind, but of yours (for my mind is *not* yours), and this would seem impossible without doubling it into two distinct things, or, in other words, without reverting to the ordinary dualistic philosophy of insulated minds each knowing its object representatively as a third thing,—and that would be to give up the pure-experience scheme altogether.

Can we see, then, any way in which a unit of pure experience might enter into and figure in two diverse streams of consciousness without turning itself into the two units which, on our hypothesis, it must not be?

II

There is a way; and the first step towards it is to see more precisely how the unit enters into either one of the streams of consciousness alone. Just what, from being 'pure,' does its becoming 'conscious' *once* mean?

It means, first, that new experiences have supervened; and, second, that they have borne a certain assignable relation to the unit supposed. Continue, if you please, to speak of the pure unit as 'the pen.' So far as the pen's successors do but repeat the pen or, being different from it, are 'energetically'[4] related to it, it and they will form a group of stably existing physical things. So far, how-

[4] For an explanation of this expression see above, Vol. I., p. 489.

ever, as its successors differ from it in another well-determined way, the pen will figure in their context, not as a physical, but as a mental fact. It will become a passing 'percept,' *my* percept of that pen. What now is that decisive well-determined way?

In the chapter on 'The Self,' in my 'Principles of Psychology,' I explained the continuous identity of each personal consciousness as a name for the practical fact that new experiences[5] come which look back on the old ones, find them 'warm,' and greet and appropriate them as 'mine.' These operations mean, when analyzed empirically, several tolerably definite things, viz.:

1. That the new experience has past time for its 'content,' and in that time a pen that 'was';

2. That 'warmth' was also about the pen, in the sense of a group of feelings ('interest' aroused, 'attention' turned, 'eyes' employed, etc.) that were closely connected with it and that now recur and evermore recur with unbroken vividness, though from the pen of now which may be only an image all such vividness may have gone;

3. That these feelings are the nucleus of 'me';

4. That whatever once was associated with them was, at least for that one moment, 'mine'—my implement if associated with hand-feelings, my 'percept' only, if only eye-feelings and attention-feelings were involved.

The pen, realized in this retrospective way as my percept, thus figures as a fact of 'conscious' life. But it does so only so far as 'appropriation' has occurred; and appropriation is *part of the content of a later experience* wholly additional to the originally 'pure' pen. *That* pen, virtually both objective and subjective, is at its own moment actually and intrinsically neither. It has to be looked back upon and *used,* in order to be classed in either distinctive way. But its use, so called, is in the hands of the other experience, while *it* stands, throughout the operation, passive and unchanged.

If this pass muster as an intelligible account of how an experience originally pure can enter into one consciousness, the next question is as to how it might conceivably enter into two.

III

Obviously no new kind of condition would have to be supplied. All that we should have to postulate would be a second subsequent experience, collateral and contemporary with the first subsequent one, in which a similar act of appropriation should occur. The two acts would interfere neither with one another nor with the originally

[5] I call them 'passing thoughts' in the book—the passage in point goes from pages 330 to 342 of Vol. I.

pure pen. It would sleep undisturbed in its own past, no matter how many such successors went through their several appropriative acts. Each would know it as 'my' percept, each would class it as a 'conscious' fact.

Nor need their so classing it interfere in the least with their classing it at the same time as a physical pen. Since the classing in both cases depends upon the taking of it in one group or another of associates, if the superseding experience were of wide enough 'span' it could think the pen in both groups simultaneously, and yet distinguish the two groups. It would then see the whole situation conformably to what we call 'the representative theory of cognition,' and that is what we all spontaneously do. As a man philosophizing 'popularly,' I believe that what I see myself writing with is double —I think it in its relations to physical nature, and also in its relations to my personal life; I see that it is in my mind, but that it also is a physical pen.

The paradox of the same experience figuring in two consciousnesses seems thus no paradox at all. To be 'conscious' means not simply to be, but to be reported, known, to have awareness of one's being added to that being; and this is just what happens when the appropriative experience supervenes. The pen-experience in its original immediacy is not aware of itself, it simply *is*, and the second experience is required for what we call awareness of it to occur.[6] The difficulty of understanding what happens here is, therefore, not a logical difficulty: there is no contradiction involved. It is an ontological difficulty rather. Experiences come on an enormous scale, and if we take them all together, they come in a chaos of incommensurable relations that we can not straighten out. We have to abstract different groups of them, and handle these separately if we are to talk of them at all. But how the experiences ever *get themselves made*, or *why* their characters and relations are just such as appear, we can not begin to understand. Granting, however, that, by hook or crook, they *can* get themselves made, and can appear in the successions that I have so schematically described, then we have to confess that even although (as I began by quoting from the adversary) 'a feeling only is as it is felt,' there is still nothing absurd in the notion of its being felt in two different ways at once, as yours, namely, and as mine. It is, indeed, 'mine' only as it is felt as mine, and 'yours'

[6] Shadworth Hodgson has laid great stress on the fact that the minimum of consciousness demands two subfeelings, of which the second retrospects the first. (Cf. the section 'Analysis of Minima' in his 'Philosophy of Reflection,' I., 248; also the chapter entitled 'The Moment of Experience' in his 'Metaphysic of Experience,' Vol. I.) 'We live forward, we understand backward' is a phrase of Kierkegaard's which Höffding quotes.

only as it is felt as yours. But it is felt as neither *by itself*, but only when 'owned' by our two several remembering experiences, just as one undivided estate is owned by several heirs.

IV

One word, now, before I close, about the corollaries of the views set forth. Since the acquisition of conscious quality on the part of an experience depends upon a context coming to it, it follows that the sum total of all experiences, having no context, can not strictly be called conscious at all. It is a *that*, an Absolute, a 'pure' experience on an enormous scale, undifferentiated and undifferentiable into thought and thing. This the post-Kantian idealists have always practically acknowledged by calling their doctrine an *Identitätsphilosophie*. The question of the *Beseelung* of the All of things ought not, then, even to be asked. No more ought the question of its *truth* to be asked, for truth is a relation inside of the sum total, obtaining between thoughts and something else, and thoughts, as we have seen, can only be contextual things. In these respects the pure experiences of our philosophy are, in themselves considered, so many little absolutes, the philosophy of pure experience being only a move comminuted *Identitätsphilosophie*.

Meanwhile, a pure experience can be postulated with any amount whatever of span or field. If it exert the retrospective and appropriative function on any other piece of experience, the latter thereby enters into its own conscious stream. And in this operation time intervals make no essential difference. After sleeping, my retrospection is as perfect as it is between two successive waking moments of my time. Accordingly if, millions of years later, a similarly retrospective experience should anyhow come to birth, my present thought would form a genuine portion of its long-span conscious life. 'Form a portion,' I say, but not in the sense that the two things could be entitatively or substantively one—they can not, for they are numerically discrete facts—but only in the sense that the *functions* of my present thought, its knowledge, its purpose, its content and 'consciousness,' in short, being inherited, would be continued practically unchanged. Speculations like Fechner's, of an Earth-soul, of wider spans of consciousness enveloping narrower ones throughout the cosmos, are, therefore, philosophically quite in order, provided they distinguish the functional from the entitative point of view, and do not treat the minor consciousness under discussion as a kind of standing material of which the wider ones *consist*.

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DISCUSSION

PHENOMENALISM AND THE PROBLEM OF KNOWLEDGE

TO prolong a discussion for the mere setting at rights of one's position were fatuous pains, but a better promise seems to warrant some comment upon the issues raised in the papers[1] of Dr. Montague and Professor Strong in partial bearing upon my own paper upon 'The Concept of Consciousness.' In that paper I aimed at presenting merely a point of view, not at all a metaphysical solution; but it is undoubted that in metaphysics points of view are at least implicit solutions, furnishing at least one's axioms; and, consequently, though the unattempted must remain unattempted, the burden of the issue is not to be evaded.

I

First of all, a matter of epithet. Dr. Montague designates my position 'naïve realism' and Professor Strong (not without reason) objects. As a matter of fact, I could scarcely choose the dubbing, least of all as connoting what Dr. Montague infers. Were 'naïve realism' merely a designation of sincere good faith and a somewhat expansible satisfaction in the reception of experience *en bloc*, I could not demur; but it seems to me that both this term and 'idealism' have become freighted with onerous epistemology; neither usefully names that non-partisan and catholic complacence in mere events which I conceive as the ideal ante-epistemology, and for the definition of which I was feeling in my previous paper.

Certainly it is with some astonishment that I find myself credited by Dr. Montague with a 'telepathic' theory of perception and by Professor Strong with belief in an 'extra-conscious world of *matter*.' So far from harboring either of these notions, or yet from entertaining the epistemological dilemmas which called them forth, I had not conceived myself to be in a position to define either one. My especial concern was, for the nonce, to escape epistemology and consider the possibility of an approach to metaphysic through compliance with the natural urgence of the phenomenal stream rather than by the bridging of what seems to me an artificially delved psychophysical gap. For the moment, I wished to disregard the problem of 'body and mind' in order to consider the more ancient and palpable problem of events in general. To indicate that the origin of interest is the *event*—the moment-to-moment happening which may or may not turn out to be a metaphysical somewhat—I chose the term 'phe-

[1] In Vol. I., Nos. 11, 19 and 20 of this JOURNAL.

nomenalism' as conveniently evasive. From the point of view of an epistemologist, Professor Strong is quite right in terming this a 'lazy phenomenalism.' But surely there is another point of view, that of the ontologist; and it was ontological applications of epistemological interpretations (of consciousness) which I was criticizing, and an ontological predisposition which I was urging as metaphysically natural.

I am far from considering this predisposition to be naïve if by 'naïve' is meant the attitude of the metaphysically unsophisticated. Naïveté, in the sense I urge, is rather a mental achievement, by no means of the easiest after generations of communal thinking and ideal construction. But the difficulty of the mental disrobement is no invalidation of the method, which, even in pursuance of the Cartesian attempt, imperfect as it was, has been richly rewarded.

II

Now, from the point of view assumed, the relation of consciousness to the nervous system is in kind not different fron any other relation of phenomena. Provisionally the brain belongs to the same category as the fixed stars, that is to say, the category of things having sensuous insistence, and, granted a hypothetical uniformity in experience, ontological determination of the stars is in some kind ontological determination of the brain; granted uniformity and consistency in nature, our problems must eventually solve themselves.

But uniformity really possesses no *a priori* necessity, and, in fact, in the world of seemings is squarely belied. The one thing we are surest of is our present comprehension of things hurrying to extinction. The isolative experience remains the common one, and consistency and continuity remain ideal. The aspect of unity in science is attained only by disregard of what fails to comport to the chosen gauge, resulting occasionally in most grotesque dissections, as, for example, when consciousness is made a sort of catch-all for unwieldy physical qualities, with the final absurdity that it has swallowed practically all that gives robustiousness to physical reality, while the uniform physical world that is left to us is a world of airy nothings.

Nevertheless, the instinct for uniformities, amounting as it does to a veritable passion of the intelligence, is not without meaning. Provided we always recognize that unities and identities are mental economies, methodological devices, and not *a priori* facts, we are warranted in our hypothesis. Uniformities are schemata rather than realities, and their value lies in the fact that they are keys to experience. Each science, with its selected uniformities, is a key

to a particular field, and metaphysics, as usurping the most general field, is key to them all. Together they form a chart for the broad orientation of our way in life. But the chart is formed by a process of ideal selection, and the fact of selection of what is significant for us from what is not, or does not seem, significant, is no impeachment of the reality of the graceless residue.

With the others, the science of the human organism also is cartographic. Were every conscious event invulnerably paralleled by a brain event (as seems to me wholly credible), still the correlation of the two would not have been carried beyond the cartographer's standpoint. Concomitance is not identity, nor is an idea of a triumphant democracy a delirium of electrons. The office of language is to make distinctions, not to obliterate them. Indeed language, which I take to be nature's analysis of experience, reveals many disjunctions as gaping as that between mind and body.

By no means would I deny that there is uniquely a problem of knowledge. Only it is not primarily a problem of body and mind; that is a conceit which comes later, as a sort of third party's thought. At the start there is merely a heterogeneous experience, from the raw stuff of which there is slowly built up, by ideal or by instinctive selection, a structure which we call our system of knowledge. The problem which thence arises concerns the relation of the order of this construction to the historic order of nature. This problem pertains to a kind of natural logic, and is only to be solved, I imagine, by a sufficient account of the evolution of mind; and no one will be rash enough to say that the disentanglement of its historic from its schematic elements—'real' from 'ideal'—is like to prove an easy task.

III

But conceding, as I do, a unique problem of knowledge for which I am prepared to offer no solution, Professor Strong, who does offer a solution, may very properly require reason for hesitance in accepting it.

The reason he himself fairly shows in the second part of his discussion (No. 20 of this JOURNAL). The distinction there drawn between knowledge properly so-called and the immediacy of real qualities is one which I do not doubt. But, in deducing from this distinction that 'matter' (by which I presume to be meant reality not yet consciously related to the self) is sensation, it seems to me that he does not escape the epistemologist's bias. His conclusion only makes explicit what this bias necessitates—the establishment of an identity between psychical and physical, between mind and body, which language refuses to recognize. In ordinary speech the brain

is not sensation, body is not mind, and ordinary speech represents at least intellectual expediency. Nor does a system which resolves to a mere assertion of the oneness of body and mind heal the gap which its terms presuppose.

For me the significance of the distinction which Professor Strong stresses lies elsewhere. Those real qualities which from our psychological point of view we call sensuous are the basis of what is truly naïve in experience, and presumably of what is properly the substance of the world. In human experience, with its intense specialization, they do not overtly display their ontological character; even in perception, as Professor Strong rightly says, they are mingled with palpable cognitive elements, and these give to our facts their ostensible natures. But it is easy to satisfy oneself of the insecurity of these natures. A fairly concentrated mental effort enables us to alter them at will, and in reviewing the mind's development one readily detects the progressive alteration of nature. Human experience as organized by human knowledge pursues idiosyncratic courses, and its so-called anchorage of fact is its most palpable and partial fiction.

Nevertheless, we are forced to judge and infer from the midst of this experience and on the basis of what it affords. Fortunately it does not leave us destitute. Knowledge—even in perception—is characteristically retrospective. That is to say, it recognizes an order of nature quite distinct from its own; its essence is the affirmation of a history which it schematizes, nor does it pretend to be true to this history except so far as is humanly expedient. The human bias is frankly avowed.

That we can wholly escape the disability which the form of knowledge entails is not to be thought, but certainly its own requirements of consistency and completeness impel us to affirm for those primary qualities which we guessingly recognize in perception other relations than their relations to our thought or feeling of them. The unitary consciousness that thinks and feels is a relatively late product of evolution and can not but concede a reality antedating itself. To reconstruct that reality into a world-order evolving in independence of our thought, is a proper problem of philosophy. In that reconstruction, body and mind would each find proper account, but it is hard to believe that they would be confounded with one another as *things,* after having been first so saliently distinguished by nature, or that they would be separated irrevocably as *qualities* when nature so emphatically unites them in a single experience. The 'psychophysical organism,' like other 'things,' is a highly specialized group of easily distinguishable

attributes and functions, and it would seem to be metaphysically idle to hypothecate but one or two species of reality where nature has so plainly furnished a multitude.

IV

There is one other point to which I would briefly refer. In my previous paper I had endeavored to be explicit in challenging the notion of a brain-enveloped consciousness, and I can only understand Dr. Montague's curious misapprehension of my position, which leads him to credit me with a belief in tentacles of consciousness reaching from the brain to the fixed stars, on the supposition that he is unable to conceive non-spatial experiences, or even non-coordinated spatial experiences. As a matter of common conception, many of our ideas have nothing to do with space, while those that have are not always concerned with the same space. The space which we call real, as opposed to that which we denominate ideal, is quite plainly the outgrowth of processes of selection, and it is by no means evident that its reality is not to a large extent a fiat creation. In fine, even on the hypothesis of a noumenal space there is no insistent reason for locating consciousness within it, while from a Kantian point of view this would be patently absurd.

But Professor Strong has so admirably answered Dr. Montague's misapprehension (in No. 19, page 520) that I need not dwell upon it here. There is, however, one point in which both Dr. Montague and Professor Strong find an especial cogency—the matter of time, disparity between an event and its perception—and to this I would briefly revert.

The gist of the difficulty lies, I take it, in a failure to recognize the retrospective reference of perception. We recognize the object perceived as the cause of the perception of it, thus by the very nature of causality assigning it to the historical rather than to the cognitive order of events. This does not necessitate that the sensuous element in the perception—the flare of the dying star—itself become symbolical; as a matter of fact, this symbolizes nothing. But the perception, besides the sensation, includes that which makes it perception, and that in turn includes a direct sensible inference of the existence in time of the object perceived. The temporal lapse we recognize as temporal continuity, or, in other words, we perceive time.

If we ask what, in a metaphysical sense, is the cause of a perception, we must acknowledge that, very possibly, it may be different from what it is perceived to be; that is, our perceptual inferences are liable to error. But it is absurd to pretend that a cause is not actually perceived. When we analyze or when we experimentally

enlarge the range of our perceptions, we may expand the cause beyond our original perception; we may add inference to inference, and include, for example, the body and its perceptive mechanism, or even inter-stellar happenings. In doing this, we interlard real qualities with ideal constructions, hereditary as well as individual, instinctive as well as rational, and, the chances are, eventually choose as the sole normal node of reference for reality its sensuous aspect, that is, its relation to perceptual consciousness.

But, even supposing the necessity of this choice, we may still urge that events are perceived as temporal in precisely the same sense in which they are perceived as spatial. I agree wholly with Professor Strong that the continuity of the world-order as a whole—whether temporal, spatial, or causal—is not directly conveyed in experience. But minor continuities are so conveyed, and our most ordinary life comports itself to the assurances which these continuities afford.

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REVIEWS AND ABSTRACTS OF LITERATURE

A System of Metaphysics. GEORGE STUART FULLERTON. New York, The Macmillan Co., 1904. Pp. x + 627.

'Back to Berkeley' is the suggestion which comes to the reader of Professor Fullerton's work from more than one aspect of the treatment. Indeed, the author himself often calls attention to the points of similarity between his doctrine and that of Berkeley. The theory of space, the relation between visual and tactual sensations, the almost complete ignoring of elements other than sensory, and lastly, a point which is decidedly in the author's favor, a lucid and trenchant style, all remind the reader of the brilliant writer of two centuries ago. In yet another respect the present treatise recalls Berkeley. Metaphysics for Professor Fullerton means almost precisely what it meant for Berkeley—chiefly a theory of knowledge, with some incidental treatment of the relation of mind to mind, and with a theistic outcome. Professor Fullerton has an extended discussion of the relation of mind and matter, but otherwise there is close agreement as to the scope and method. There is in Professor Fullerton's system little or no reference to conceptions of the universe, except under the categories of mechanism and teleology. There is no mention of the general conception of evolution. There is little or no effort to consider the nature of reality, except from the standpoint of the problem of knowledge. There is no effort to relate the moral or esthetic aspects of reality to its other aspects; so that if we were to take the title, 'A System of Metaphysics,' literally, it would leave out much which might reasonably be considered in a treatment of ultimate reality. Doubtless, however, an author has a right to write a book upon the sub-

ject which interests him, and if he pleases to call it 'A System of Metaphysics,' it may be said that the term has no such well-defined usage as would prevent him from so naming it.

The main interest of the work lies in the author's views as to the self, the external world, and the relation between the two. There is a brief chapter on the will, and two on God, but, as these topics seem to interest the author chiefly as an opportunity for the criticism of other theories, they may be omitted from this notice.

The view which the author presents of the external world, as he himself states, suggests the doctrine of Berkeley, Hume and Mill. Its main difference is its effort to avoid their psychological standpoint. 'The psychologist distinguishes between his consciousness of the real world and a real world which he assumes to lie beyond it' (p. 193). The key to the author's position is found in the conception of the symbol. The 'real,' 'external' world must be a world of which we are conscious, and therefore in a sense must be in consciousness. At the same time, it is evidently not identical with any particular intuition; for in any object regarded as real, there are parts or qualities not actually sensed at the moment, and perhaps, like the other side of the moon, never actually perceived. The real external world is thus a compound of sensational and imaginary elements. This 'is represented or symbolized in any specific consciousness by elements which must be in part, though not wholly, identical with the elements symbolized.' If we ask more specifically what kind of sensations belong to the real world and what to the symbol in consciousness, we are given an answer based in the first instance on Locke and Berkeley: the secondary qualities are subjective; visual sensations are signs of touch sensations. Sensations of touch and movement are capable of accurate measurement, 'fall into an interrelated system which is capable of accurate description, and, through their relations to which, sensations of other classes may be given that orderly arrangement which constitutes the difference between a chaos and a world.' The tactual world 'is what we mean by the objective; other elements of our experience are by contrast subjective' (p. 154). This distinction is further illustrated by space. 'All space is tactual space. Colors do not occupy the same place as the tactual things to which they belong. They do not occupy space at all, nor do sounds or tastes or odors.'

When now we come to the analysis of space, the aim is to distinguish between the space of intuition and 'real space.' The latter has the qualities which Kant attributed to space, viz., it is infinitely divisible, and is a single whole. On the contrary, the space of intuition is not infinitely divisible although it is composite. To reach a space to which mathematics will apply, with its lines which are always lines and not simple points, we substitute for the specific space of intuition a tactual space. But this is only a temporary resting-place, and we must substitute for this the space of 'real' things as conceived by science. Nor is this permanent: "Every reality in which we may rest at any time is, thus, a relative reality, and its space is relatively real. The absolute object

and its absolute space are not *an* object (intuitive) and *a* space (the 'form' of an intuition), but rather an indefinite series of substitutions gathered up and hypostatized into an individual. It is to this absolute object and its absolute space that the mathematical conceptions apply in all their rigor" (p. 191). 'The real world in space and time, is then, a vast complex of tactual things standing to each other in certain relations of distance and direction, and passing through a system of changes.'

So much for the real world. What of the mind? The mind is for Professor Fullerton only a word for the 'totality of mental phenomena,' or 'a particular group of experiences.' Indeed, there seems little justification for using a noun in the singular when speaking of experiences which are referred to the 'subjective order.' The sort of experiences which are usually cited as evidence that there is something not included within the material world, are 'sounds, odors, colors, tastes.' Whether by accident or by choice, the processes of thinking and willing are not emphasized in forming the conception of the mental. Perhaps the author does not care to emphasize processes which seem to evidence unity and activity, for his satire is never keener nor his satisfaction more evident than in his derision of the doctrine of a self or knower, in distinction from the elements of consciousness,—elements of sensation and idea, of material and form. The Kantian or Neo-Kantian 'synthetic activity,' and the 'atomic self' of the 'plain man' are equally in contempt. A historical and psychological explanation is offered for the fact that certain thinkers have maintained the doctrine of a synthetic activity. It is a survival of the 'faculty' psychology: 'consciousness is complex; what can better synthesize than a synthetic activity?' (484). There is no theoretical justification for the assumption of any such activity, either outside of experience or within experience.

It might perhaps be supposed that in recognizing 'form' as one of the elements of consciousness, Professor Fullerton is doing justice to all that Kant really demonstrated as a non-sensational element in experience. If, however, Professor Fullerton intended to include in his analysis of consciousness anything corresponding to the *organization* of content, or anything which would imply that a self was shaping its content in accordance with needs or ends or categories of its own, he has certainly not made this prominent. He occasionally uses such words as 'conception,' speaks of the external world as a 'construct,' and in one passage which, so far as I have noticed, is unique, he actually speaks of what might be regarded as a constructive activity of consciousness in forming a geometrical conception of a line and point (p. 191). But if there is any active functioning of the intelligence assumed in the system, it is referred to incidentally, and not made a constitutive element in building up experience. The whole theory, in fact, is a theory of content. There is no important use of conceptions of function or activity or organization.

This applies as well to the theory of the external world. The differ-

ence between the subjective and the objective is found in the difference between the symbol and the symbolized, between the visual and the tactual. It is unnecessary to say that those who think that Kant contributed a new insight to the analysis of experience believe that, in the real world of objective things, the conception of permanence and the conception of causality, which are important elements in that very objective order of which Professor Fullerton speaks, can not be properly brought under the conception of sensation. If now Professor Fullerton replies that to allege any organizing activity in consciousness is to fall back upon the old faculty psychology, it is easy to retort that his own favorite expression, 'consciousness is complex,' carries with it as objectionable implications of a different sort. If space permitted, it would be easy to amuse the reader by replacing Professor Fullerton's ridicule of the literal, physical meaning of synthesis, given on page 481, with equally senseless ridicule of applying the term complex to the mind in a literal sense. How, it might be asked, can consciousness be 'folded together'? The real point of the matter is, of course, not in names, but in the general conception of experience which our names indicate; and my understanding is that Professor Fullerton, like Berkeley, would characterize all our experience in the general manner indicated by the term sensational, rather than in a manner indicated by the conception of organization. Berkeley, to be sure, believed in a self, but he gave it no function in the organization of experience. Professor Fullerton's construction of experience involves memory and imagination, but, with the exception of incidental hints, seems to involve nothing more.

But whatever may be one's view as to the necessity of a synthetic unity for knowledge, a more fundamental question of method is suggested. Is it good metaphysics to discuss the unity of the self—to say nothing of the immortality of the soul and the existence of God—from the cognitive aspect only? Action according to a purpose is certainly a phase of consciousness that should be reckoned with here. The facts of agency and responsibility have had a large share in the historical origin of the conception. They should still be considered, at least, in discussing the worth of the conception.

In the treatment of the relation between mind and body there is much acute criticism of both inter-actionistic and parallelistic theories. It is held that both involve a conception of mind and body as separate entities. Both attempt explanation by classification of the relation in question with what is really a material analogy. Nevertheless the author prefers the parallelistic point of view. In anticipation of the objection that parallelism explains nothing, he insists that 'we have no right to ask that the relation of mind and body be explained, in the usual sense of the term' (*i. e.*, by classing it with other relations). 'The relation of mind and body is unique.' Probably all would grant the uniqueness of this relation, but it is not especially illuminating to stop with this statement. It reads better as a first word than as a last word. If it is premature to ask for an 'explanation' of the origin of consciousness, of

the significance of consciousness in evolution, of the process called control, it would at least not seem unreasonable to ask for some attempt to investigate in these directions. The 'plain man' is indeed reassuringly told that he may continue to say that certain changes in the physical world take place because a certain man formed a plan—provided he means only that there has been a constant relation between plan and accomplishment. But I for one should have been glad to have some suggestions toward a way of thinking consciousness and the physical world in view of these facts.

With regard to the discussions on space, it seems to me that the criticisms of the Kantian view misinterpret the implications of the phrase 'infinitely divisible.' To hold that a finite line, which is infinitely divisible, can be traversed, does not involve the doctrine that one must complete an infinite series in order to traverse it. The doctrine of infinite divisibility implies that if you proceed along a series, in which the law is that each successive term is half the preceding, you can never reach the limit *in that way*. This, however, does not mean that to pass over any space you must do it according to that law. Of course, too, the mathematical interpretation of his spinning top would be, that if the speed were increased the time of the revolution would approach nearer and nearer to zero as its limit; it would never reach that limit. While Professor Fullerton was inserting these puzzles, he might in consistency have further edified the reader by quoting one of the consequences of Berkeley's theory which that author himself was acute enough to discover, viz., that an isosceles right-angled triangle can not be drawn. For if a line is composed of a definite number of points, then the hypothenuse of such a triangle would have to be composed of a number of points equal to the square root of two, which is not an exact number.

In writing this notice I have sought to point out the chief features in the standpoint which seem to me to challenge attention. I have not thought it necessary to dwell on the acuteness, the brilliancy and the force with which Professor Fullerton has urged his views. These will be anticipated by those who are acquainted with his writing, and will be recognized by the reader. I can but feel, however, a decided regret that the author did not see fit to take up more directly the problems suggested to the thinker of to-day by natural science and history, and to push forward the boundary of our thinking along these lines.

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Analysis of 'Localization,' Illustrated by a Brown-Séquard Case. C. SPEARMAN. *British Journal of Psychology*, Vol. I., No. 3, pp. 286–314.

The main contention of this paper is in the direction of a vigorous protest against the dictum of Förster, that tactile localizing power is completely dependent upon the efficiency of movement-sensations. The occasion for the present analysis was afforded by a Brown-Séquard case under treatment in the Leipzig nerve hospital about a year ago. Upon admission to the hospital the condition of the patient was as follows: The

movements of the *left* leg were atactic, and all sense of its position was lost. Tactile sensibility on this leg was diminished but not destroyed. The movements of the *right* leg were only slightly atactic, and the perception of position was normal. The tactile sensibility of this leg was almost completely destroyed. After the removal of a knife-point which, in a stabbing fray twenty-six years before, had been broken off at the left of the sixth dorsal vertebra, the patient began a slow but steady improvement. The operation was performed in October, 1903. For four months, beginning with the following May, the patient was under examination by the writer, and about 3,800 careful tests were made.

As a preliminary to the spatial tests, an exact quantitative determination was made of the sensibility to movement and to contact on the two legs. The general state of these matters has already been noted. In the course of the experiments it was found that fatigue diminished the movement sensibility of the left leg only and the tactile sensibility of the right leg mainly.

The capacity to localize cutaneous impressions on the legs was then subjected to a detailed examination. Three methods of procedure were used: the 'simple,' where, after the manner of Henri, sight and contact were excluded; and those of Weber and Volkmann, termed 'groping' and 'looking,' respectively. The three methods gave diverse results. By the 'simple' method the left leg (insensible to movement) showed the greater inability to localize contacts. But by the other two methods this same left leg displayed the greater localizing capacity. In all three cases fatigue produced no appreciable change. It is significant to note in connection with this last fact that it was only in the state of fatigue that the compass test showed any very marked derivations from the normal on most of the regions explored. In fatigue, however, all power to discriminate the two points, whether simultaneously or successively applied, was lost.

The attempt to interpret these seemingly conflicting results forces the author to make a fresh critical analysis of the various localizing processes. With the general features of this analysis most psychologists would, I fancy, be in substantial agreement. Special interest attaches to the discussion of the 'simple' localization. How does a finger-tip come to point with any degree of accuracy at a stimulated point on a lower limb? It would seem that one must first know just where in surrounding space this stimulated part of the limb is. This information can not, however, be given by 'positional' sensations, for there are no such sensations. Nor, on the other hand, can introspection find any movement-sensations finely enough graded to serve as accurate indications of a limb's position, not to mention the fact that, if they did exist, the localizer would have to collect and interpret all the messages from the joints in the entire circuit from the finger-tip to the excited spot—a process not to be discovered in consciousness. The writer is therefore forced to assume that the arousal of perceptions of position is accomplished by the mechanical summation, without accompanying consciousness, of neural excitations caused by movement,—proceeding possibly from the corpuscles of Vater,—the result

alone reaching consciousness under the form of a definite spatial perception. Derangement of this purely physiological mechanism is responsible for the impairment of localization as well as for definite illusions such as allocheiria, the excitations either failing to reach the cortex, or arousing a wrong cortical area, and thus evoking an erroneous spatial image.

On this view loss of sensibility to movement, and loss of power to localize tactual impressions, may, to be sure, be coincident, but they are not causally related. The lesion that impairs one function may or may not impair the other also. The improvement in localizing under the methods of 'groping' and 'looking' is due, the author holds, to the aid of the associated spatial images which are aroused in addition to the pure 'thereness' of the 'simple' method.

The contention which the author is chiefly interested in supporting seems to be well maintained. The merits of the paper lie in the presentation of trustworthy experimental data, and in the clear and comprehensive analyses, a genuine contribution being made to both fact and theory. We are thus helped to advance a little in this puzzling field of tactual localization. It seems a great pity, however, that the patient himself could not have been made to contribute to the matter by his own introspections. If such were gleaned, they are not revealed to us. The analyses of the localizing process refer to the normal individual. But as welcome and as badly needed as these are, we have still greater need of analyses made by one in whom the localizing functions are deranged. Must we wait for a Brown-Séquard case in the person of a professed psychologist before our needs are satisfied?

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A Comparison of Some Mental and Physical Tests in their Application to Epileptic and Normal Subjects. W. G. Smith. *British Journal of Psychology,* January, 1905. Vol. I., No. 2, pp. 240–261.

Six normal individuals (attendants in an asylum), five epileptics whose general intelligence was not notably impaired, and five epileptics showing marked dementia were tested with respect to power of recognition, immediate memory, simple and choice reaction time, discrimination of length, rapidity of movement, tremor, rhythm and strength of grip. In discrimination of length, rapidity of movement, tremor, rhythm and strength of grip there was no apparent difference between the groups. No demonstrable differences were found in the influence of practice, though the normal individuals seem to improve slightly more. In recognition, memory and reaction time the epileptics are inferior; the essential facts being as follows:

	Recognition.							
	Pictures.				Words.			
	Forgetting.		Confusion.		Forgetting.		Confusion.	
	av.	m.v.	av.	m.v.	av.	m.v.	av.	m.v.
Normal	1.2	0.5	0.8	0.4	1.7	0.6	0.8	0.5
I. Epileptic (nearly normal)	1.3	0.7	0.7	0.5	2.1	0.8	1.9	1.3
II. Epileptic (demented)	1.7	1.0	2.5	1.2	2.2	1.2	3.3	1.3

	Immediate Memory. Series of 4 Letters.	Letters Rightly Placed. 5	6	7	9
Normal	3.9	4.8	4.9	4.9	4.6
I. and II. Epileptic	3.6	4.1	3.8	3.8	3.0

	Reactions: Choice. av.	m.v.	Simple (throwing cards in a heap) av.	m.v.
Normal	17.	1.6	8.3	0.6
I. Epileptic	23.6	2.7	11.0	1.0
II. Epileptic	32.0	3.0	13.6	1.2

It seems likely that the choice reaction time or, still better, the difference between an individual's simple and choice reaction time may have diagnostic value. Unfortunately Mr. Smith does not give the individual records or explain clearly whether the m.v.'s are (1) the averages of the mean deviations of individual's separate trials from their averages, or (2) the averages of the deviations of the averages of individuals from the average of the whole group. Apparently his m.v.'s are the former, though to estimate the reliability of his results and to estimate the diagnostic value of the tests the latter are essential.

Such work as this is very much needed, not only for obvious practical reasons, but also because, as Mr. Smith says of his negative results, it 'forces on our attention the richness and complexity of mental life.' All workers in individual psychology should, however, make it an absolute rule to print the individual measurements except when the expense is prohibitive.

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Applied Axioms. Alfred Sidgwick. *Mind*, January, 1905, pp. 42–57.

"As an excuse for writing on so ancient a subject as the respect which is properly due to 'undeniable truth,' a modern instance will be useful as showing that, in spite of the antiquity of the problem, its solution is still a little obscure." The 'modern instance' which furnishes the supposedly necessary justification for this article is Dr. McTaggart's contention (in *Studies in Hegelian Dialectic*, pp. 110–113) that we must either abide by the law of contradiction in all cases or else assume that sensation apart from thought can assure us of reality. As against this argument, Mr. Sidgwick, who adopts the position of pragmatism, maintains that a contradiction may result from the unavoidable defects of language and of thought, in so far as thought depends upon antithesis; and consequently "that the actuality of anything must be judged on other grounds than that of our power of explaining its nature in words; and that, where we are compelled for all practical purposes to recognize that a thing or a process is actual, no verbal argument to show that it is impossible has any standing-ground." The easy dilemma by which McTaggart demolishes this position overlooks the essential distinction 'between an undeniable law and an undeniable major premise (or *use* of an undeniable law).' Stated abstractly, the law of contradiction is a law the truth of which no one would find it worth his while seriously to doubt.

In concrete cases, however, it is always possible that the proposition, *A* is *B*, while literally true, may be virtually untrue, owing to the neglect of some important aspect or detail. Rigid insistence upon the law, therefore, becomes a positive source of error, for it withdraws attention from possible ambiguities in the predicate, and it results in the hasty condemnation as illusory of such notions as causation and change, which have most abundantly proved their practical value. Mathematical axioms are no exception. "Behind an inference resting on an appeal to arithmetical principles there is always implied the saving clause 'so far as these are numbers'—which includes both the proviso 'if I have counted as I intended' (*i. e.*, correctly), and the proviso 'if the laws of number are applicable to the subject.'"

Stated briefly, the point of the article is that the law of contradiction is trustworthy only when we are able to assure ourselves that the premises in the given case have been stated correctly. For such correctness the law itself of course furnishes no guarantee. This much is fairly obvious. As a plea for an arrest of judgment until further data are secured the argument may often be quite in place. But whether we can pass directly from this to the conclusion apparently intended, that practical considerations may justify us in entertaining opinions which are in open conflict with our reasoned results—that is indeed another question, and one for which the author advances no proof.

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JOURNALS AND NEW BOOKS

ZEITSCHRIFT FÜR PHILOSOPHIE UND PHILOSOPHISCHE KRITIK. Band 125, Heft 1. *Das Verhältnis des Fühlens, des Begehrens und des Wollens zum Vorstellung und Bewusstsein* (pp. 113–163): J. Bergmann. – The ego that finds within itself feeling, etc., is a unity such that two objectively distinct and particular properties can be united in it only if two other properties standing to them in the relation of universal to particular, and also reciprocally conditioning each other in that though objectively distinct they are subjectively identical, are such that, were one of them only present in the ego, that ego would be the universal for which the two first named properties would both be particulars. No one can have ideas without perception of self. Every feeling has an idea for a substrate, and every idea, a feeling. To free intensity from its contradictions we must say that intensive properties no more tend to disappear with decrease of intensity than do tones with the lowering of pitch. The contrast of positive and negative applies to feelings. *Zur geschichtlichen Bedeutung der naturphilosophie Spinozas* (pp. 163–186): A. Hoffmann. – Spinoza was far more truly a successor of Hobbes than of Descartes, both as regards the use of the geometrical method, and as to emphasis on social philosophy, the relation of body and mind, free will, and the differences between human and other souls. *Bericht über die italienische philosophische Lit-*

teratur des Jahrens 1902 (pp. 186–202): C. D. PFLAUM. *Recensionen.* R. Falckenberg, *Hermann Lotze. I: Das Leben und die Entstehung der Schriften:* M. WENTSCHER. E. Meumann, *Die Entstehung der ersten Wortbedeutung beim Kinde:* M. ISSERLIN. R. Eisler, *Studien zur Werttheorie:* J. K. KREIBIG. A. Dryoff, *Über den Existenzialbegriff:* v. ASTER. *Notizen. Neu eingegangene Bücher. Aus Zeitschriften.*

Elkin, W. B. *Hume: The Relation of the Treatise of Human Nature-Book 1 to the Inquiry Concerning Human Understanding.* New York: The Macmillan Co. 1904. 8vo. Pp. ix + 330.

Hibben, John Grier. *Logic, Deductive and Inductive.* New York: Charles Scribner's Sons. 1905. 8vo. Pp. xvi + 439. $1.40.

Santayana, George. *The Life of Reason or the Phases of Human Progress.* New York: Charles Scribner's Sons. 1905.
Vol. I. *Reason in Common Sense.* 12mo. Pp. x + 291. $1.25.
Vol. II. *Reason in Society.* 12mo. Pp. viii + 205. $1.25.

Yale Psychological Studies. Edited by Charles H. Judd. *Psychological Review, Monograph Supplement.* No. 29. The number contains the following articles: 'Introduction to a Series of Studies of Eye Movements by Means of Kinetoscopic Photographs,' by Charles H. Judd, Cloyd McAllister and W. M. Steele. 'The Fixation of Points in the Visual Field,' by Cloyd N. McAllister. 'The Muller-Lyer Illusion,' by Charles H. Judd. 'The Poggendorff Illusion,' by E. H. Cameron and W. M. Steele. 'The Zollner Illusion,' by Charles H. Judd and Henry C. Courten. 'Analysis of Reaction Movements,' by Charles H. Judd, Cloyd N. McAllister and W. M. Steele. 'Practice without Knowledge of Results, by Charles H. Judd. 'Movements and Consciousness,' by Charles H. Judd.

NOTES AND NEWS

COLUMBIA UNIVERSITY has received $100,000 from Mr. Jacob H. Schiff to endow a chair of social work, and the new professorship has been filled by the appointment of Dr. Edward T. Devine, general secretary of the Charity Organization Society, director of the School of Philanthropy and editor of *Charities.* This endowment makes possible the close affiliation between the School of Philanthropy and Columbia University.

THE first Herbert Spencer lecture, established by Pandit Shyamáji Krishnavarma, M.A., of Balliol College, was given at Oxford, on March 9, by Mr. Frederic Harrison, M.A., honorary fellow of Wadham College.

MR. SHYAMÁJI KRISHNAVARMA has offered to establish six traveling fellowships at Oxford, five of them to be called the Herbert Spencer Indian fellowships. The fellowships are intended for natives of India.

DR. R. S. WOODWORTH, instructor in psychology in Columbia University, has been promoted to an adjunct professorship.